

Geometry on the Plane

1)

What is the area of a trapezoid with vertices $(-3, -1)$, $(-1, 3)$, $(3, 3)$ and $(3, -1)$?

- a) 24 sq. units b) 20 sq. units
- c) 16 square units d) 12 sq. units

2)

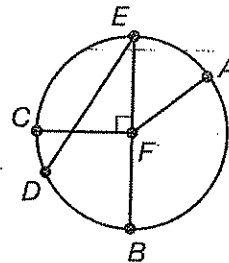
A figure has coordinates $(-3, 2)$, $(-3, -4)$, $(2, 2)$ and $(2, -4)$.
What is its area?

- a) 10 sq. units b) 24 sq. units
- c) 30 sq. units d) 36 sq. units

3)

Which statement about circle F is **incorrect**?

- A The length of \overline{CF} is equal to \overline{AF} .
- B The diameter is \overline{EB} .
- C The circle has 4 radii.
- D The only chord is \overline{DE} .



4)

A square has coordinates of $(1, 2)$, $(5, 2)$, $(1, 6)$ and $(5, 6)$.
Suppose a circle with a radius of 2 units is drawn inside the square.
At what point is the center of the circle?

- a) $(3, 2)$ b) $(3, 4)$ c) $(3, 6)$ d) $(1, 4)$

5) \overline{AB} has endpoints of (1, 3) and (1, 7). Which of the following line segments is **not** perpendicular to \overline{AB} ?

- a) \overline{CD} (-2, 5) and (4, 5) b) \overleftrightarrow{EF} (-1, 6) and (0, 6)
c) \overline{GH} (-2, 3) and (3, 3) d) \overline{IJ} (-1, 4) and (2, 6)

6) Which pair of coordinates form perpendicular line segments with the ordered pairs (3, 0) and (7, 0)?

- a) (3, 2) and (5, 2) b) (1, 2) and (5, 2)
c) (5, 0) and (7, 2) d) (4, -1) and (4, 4)

7) Three ordered pairs of a rectangle's vertices are (3, 2), (7, 2), and (7, 5). What is the perimeter of the rectangle?

- a) 7 units b) 10 units c) 14 units d) 20 units

8) Which of the following has the **greatest** area?

- a) a circle with a radius of 4 cm
b) a triangle with a base of 8 cm and a height of 5 cm
c) a rectangle with a length of 7 cm and a width of 6 cm
d) a parallelogram with a base of 9 cm and a height of 4 cm

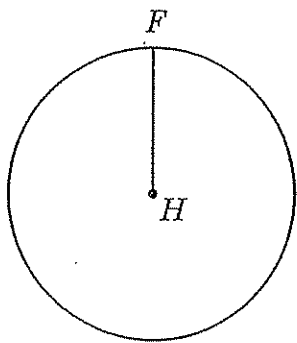
- 9) A line and a triangle are in the same plane. The line intersects the triangle at exactly one point, P . Which statement is true?

A P is a vertex of the triangle.
 B P is a midpoint of a side of the triangle.
 C P is in the interior of the triangle.
 D P is in the exterior of the triangle.

- 10) What is the maximum possible number of points of intersection between an equilateral triangle and a circle in the same plane?

A 3
 B 4
 C 6
 D 7

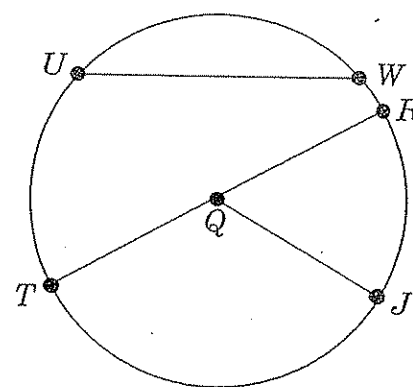
- 11) Radius FH is 7 cm.



What is the length of the longest chord of circle H ?

A 7 cm
 B 9 cm
 C 14 cm
 D 21 cm

- 12) Which statement below must be true about circle Q ?



A The distance from U to W is the same as the distance from R to T .
 B The distance from U to W is the same as the distance from Q to J .
 C The distance from R to T is half the distance from Q to R .
 D The distance from R to T is twice the distance from Q to J .

- 13) The radius of a circle is 45 in. Which is a true statement about the circumference (c)?

A $c > 6,000$ in. and $c < 6,500$ in.
 B $c > 250$ in. and $c < 300$ in.
 C $c > 100$ in. and $c < 150$ in.
 D $c > 50$ in. and $c < 100$ in.

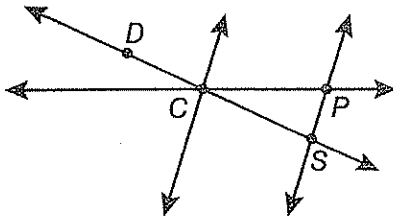
- 14) Circle P and circle Q both have the same center point at $(2, 3)$. The point $(2, 6)$ is on circle P . The circumference of circle Q is twice the circumference of circle P . Which point listed below is on circle Q ?

A $(2, 0)$
 B $(2, 3)$
 C $(2, 9)$
 D $(2, 12)$

- 15) The dimensions of a rectangle are both composite numbers. If the area of the rectangle is 40 sq. units, what are the dimensions of the rectangle?

a) 1 and 40 b) 2 and 20 c) 4 and 10 d) 5 and 8

- 16) Which point is shared by three lines?



- A Point P
B Point S
C Point C
D Point D

- 17) **DIRECTIONS:** In this activity, you will be given a diagram of a circle O inside of a square. Use the diagram to answer the questions.

- A. Give the coordinates of the points where the square, circle, and its diameter all intersect. _____
- B. Name a point that lies in the exterior region of the circle and square. _____
- C. Give the coordinates of two points that lie within the interior region of the circle and square. _____
- D. Find the length of the diameter of the circle. _____
- E. Find the coordinates of the two points that intersect with the circle and the square, but not with the diameter. _____
- F. Are the diameter and \overline{AB} perpendicular, parallel, or intersecting? _____

